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The applicants' 2/12/10 amendment and response are noted. It is also noted that applicants election of Group II and their election of species of Portland cement as reactive support material and polyvinyl alcohol as liquid polymer is further repeated for clarification.

35 USC 102/103:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,5,6,26-28,30, and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Childs et al. '832, Beckenhauer '270, Schutt '191 B2, Standke et al. '766 B2, Mosquet et al. '948, Butler et al. '323, Berke '962 B2 or '281 A1, Gray '480 A1, Mueller '249 B2, Wallner '602 A1 or '545 B2, Shoshany et al. '623 A1, Symons '761 B2, Cowan et al. '598, Adams et al. '323, Cattanach '784, Clark Jr et al. '555, or Ludwig '955.

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All the references above teach a composition comprising Portland cement that is mixed with polyvinyl alcohol (hereafter PVOH) thus anticipating applicants claims requiring a building material comprising a reactive support material (Portland cement) and a liquid polymer (PVOH) applied to it. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Childs et al. teach mixing PVOH with hydraulic cement such as Portland cement to create a delay set thus anticipating applicants' claims. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art (see claim 1).

Beckenhauer teaches an admixture of porous building material and PVOH (see claims). The PVOH by mixing would coat the reactive support/substrate particles of Portland cement.

Schutt '191 and Standke et al. '766 B2 teach a silane coating which is a liquid polymer that is applied to Portland cement (see claims). This reference will be potentially withdrawn when applicants place only their specific elected species of PVOH into claim 1. The other species would thus be withdrawn or non-elected.

Mosquet et al. 'teach a wax (liquid polymer) coating on concrete (Portland cement and aggregate) which would coat Portland cement particles by mixing. Applicants can have this reference potentially removed by inserting PVOH (not the abbreviation-please write long form as polyvinyl alcohol in claims) into claim 1. This reference was only used as were the ones containing silane coating because claim 1 is generic and does not teach any specific reactive support

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material. Applicants should amend claim so it only claims polvinyl alcohol as the reactive support material in 1 a).

Butler et al. '323 teach a composition comprising Portland cement and siloxane coating thus anticipating applicants' claims. These two components when mixed will coat the cement particles (see claims). This reference would be withdrawn if applicants insert PVOH into claim 1.

Berke et al. '962 B2 or '281 A1 teach Portland cement coated with PVOH in column 7, lines 15-22 meeting applicants claims and anticipating them. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Gray '480 teaches a composition comprised of cement and PVOH viscosity modifier. The act of mixing the two components will coat the cement particles thus meeting applicants' claim limitations (see claims 1 and 5).

Mueller '249 B2 teach a composition comprising cement and PVOH that is mixed together which would coat cement particles (see claims).

Wallner '602 A1 or '545 B2 teach a composition comprising cement, PVOH, and sand thus anticipating applicants' claims. The extra component of sand does not teach away from applicants' claims because "comprising" claim language fails to exclude ingredients such as sand (see claims).

Shoshany et al. '623 teach a composition comprising wax mixed with cement concrete which would coat the cement particles with wax (liquid polymer). However, this reference will be withdrawn if applicants insert PVOH into claim 1 since this was the elected species.

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Symons '761 B1 teach a composition comprising cement (hydraulic binder) and polyvinyl alcohol which is mixed to form a paste. It is the examiner's position that this mixing of these two components will lead to coated particles of cement (coated with PVOH) in this paste thus anticipating applicants' claims. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Cowan et al. '598 teaches mixing cement and PVOH/vinyl acetate liquid polymer which will coat cement particles (see claims).

Adams et al. '323 teach a composition comprising cement, fluid loss agent such as PVOH, etc. which are mixed together and coats the cement particles (reactive support material). See col.6, lines 28-33.

Cattanach '784 teach Portland cement mixed with PVOH which will coat cement particles (col.4, lines 10-30).

Clark Jr et al. '555 teach a composition comprising Portland Cement and PVOH and bentonite which when mixed together will coat cement particles with PVOH. Note that applicants' use of comprising claim language opens their claim to inclusion of other components such as bentonite clay.

Ludwig '955 teach a composition comprising Portland cement and PVOH and the mixing of the two components will lead to coated cement particles (see col.2, lines 20-40).

It is the examiner's position that he has provided the best available prior art in accordance with MPEP guidelines and it is not his intention to overwhelm applicants with many references. However, consideration of the broadness of

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applicants claims must be taken into account in regard to the number of references. It is expected that upon amendment many if not most references will be withdrawn. If applicants has any questions with examiner's position, they can call for an interview but his intention was to provide the prior art that meets applicants' claims and for applicants to use all this art to amend accordingly.

Response:

The applicants appear to imply the examiner is in error regarding a large number of references (17). If that is so, please provide the citation from the MPEP where it says that the examiner is limited in the number of references he can apply especially in case of broad claims that can read upon so many references. Applicants may search for this in MPEP (limit on number of references) but they will not find any such rule. What is required is that the examiner must apply the best available prior art and he has done so. Again, the claims are so broad as to note that even more references (potentially one hundred more) could have been applied because claim 1 reads upon a coated particle of a reactive support material including Portland cement and six other reactive support materials and any liquid polymer since applicants do not particularly point out and distinctly claim the identity of their the liquid polymer in claim 1. It was hoped that applicants would at least amend their claims and it was implicitly suggested by examiner to amend claim 1 to include polyvinyl alcohol and Portland cement since they were the elected species. By doing so, prosecution would have been certainly simplified and the number of references would have been reduced.

The applicants did not amend their claim but only inserted a limitation that would have also been expected for the prior art since the same materials or components would have been expected to function in the same manner. Applicants are reminded that they cannot read the limitations of claim 5 into claim 1 either. It is improper to read the limitations of a dependent claim into an independent claim as each claim stands on its own merits. The same is also true with respect to what is disclosed in the specification but not in the independent claim. While it is true that the claims may be read in light of the specification, it is improper to read the limitations of the specification into the claims. In re Yamato, 222 USPQ 93; In re Wilson, 149 USPQ 523; Graver Tank v. Linde Air Products Co. 80 USPQ 451 (Supreme Court).

The applicants argue all references but it is noted that their invention reads upon a coated particle that delays curing action; in this case a coated particle of Portland cement (coated with liquid polymer). The applicants also noted that the prior art teaches that the Portland cement is already hydrated versus their alleged dry reactive support material (ie dry Portland cement). Yet, applicants claims do not contain any limitation that the reactive support material such as Portland cement *must be dry* before the liquid polymer coating is applied. Is it not possible that even in an aqueous/water environment that the polymer coating over the Portland cement could still delay the hydraulic reaction resulting from the presence of water? The applicants cannot argue a feature or limitation not in their claim 1 (dry reactive support material; dry Portland cement)

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and though some of the prior art references may teach mixing with water present (not dry) it still meets limitations of applicant's claims.

It is the examiner's position that he has the same components mixed together (e.g. Portland cement and polyvinyl alcohol) and applicants do not limit their claims to *dry* reactive support material; (Portland cement) Nor do they eliminate the use of water (in claim 1) and they still use comprising claim language which would permit the inclusion of water in the prior art (in other words if prior art does not mix dry Portland cement and PVA or other liquid polymer).

The applicants argue the prior art does not teach a coated pulverent material which can be sieved. The examiner disagrees since every reference cited is Portland cement powder which is same as applicants for their instant invention and it certainly can be pulverized and sieved. Further, even assuming the polymer such as PVA and Portland cement is mixed wet and there is some hydration but is later removed from slurry and dried, this mixture which is now going to at least result in Portland cement partially coated with PVA can be pulverized once dried.

The applicants are reminded that the prior art does not have to solve their alleged problem. References such as Beckenhauer merely have to show a coated particle of Portland cement (PVA for dependent claim and any other liquid polymer for claim 1 since applicants never amended claim 1 to PVA or other liquid polymers). Beckenhauer teaches the same coated particle and the same properties would thus result including "delayed" curing action.

The same goes for Butler. Applicants should note it is not a requirement for the composition as claimed that it solves applicants' problems. Butler also teach a coated particle that meets applicants' claims and it would have been expected to have the same properties (delayed curing action) because it has the same components. The fact that he teaches a long list of other components does not detract from Butler's meeting applicants' claims. Applicants use comprising claim language which does not exclude other components.

Childs may teach adding PVA to a Portland cement slurry (thus containing water) but there is no reason to doubt that though hydraulic reaction is initiated by presence of water it would not be delayed by the coating of PVA over Portland cement in the aqueous slurry mixture. The applicants never claim that they must apply a dry cement powder (reactive support material) with liquid polymer. No such limitation yet exists in claim 1 nor is examiner making any suggestion but only observing what is presently in applicants' claims.

Berke, Gray, Muller, Symons, Cowan, Adams, Cattnach, and Clark may have water (or hydration started) present when PVA and Portland cement are mixed but again applicants are *not* claiming a dry reactive support material when the liquid polymer such as PVA is mixed to coat the dry reactive support material (such as Portland cement). Had they claimed a *dry* reactive support material wherein no water is yet added and the liquid polymer coats dry reactive support material, it would have been agreed but applicants argue what they are not claiming. They cannot claim there is not delayed curing even if hydration is

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already initiated because if PVA partially coats even in aqueous solution then there would potentially be some delayed curing absent evidence to the contrary.

Wallner does not teach away from applicants' invention. Wallner's material can certainly be pulverent because it contains the same pulverent material in Portland cement. Further, a *mixture* of PVA, Portland cement, and resin coated sand would lead to at least a partial coating of PVA on Portland cement particles. While resin coated sand is also present, applicants are referred back to their own claim 1 which teaches using "comprising" claim language. Because applicants use "comprising", it allows for the presence of resin coated sand in their own instantly claimed invention. The examiner notes that he is not suggesting applicants amend the scope of their claim either (comprising to consisting essentially of or consisting of) but observing the present state of applicants' claims.

Ludwig on second look appears to be an excellent reference as he teaches mixing dry Portland cement (reactive support material) and polyvinyl alcohol (PVA-liquid polymer) which is the applicants' invention (see col.2, lines 20-35 teaching dry Portland cement mixed with PVA in Ludwig). Ludwig most certainly teaches the addition of PVA as liquid polymer which coats Portland cement reactive support material which would delay curing or setting since the PVA coating around Portland cement would prevent or limit hydration and hydraulic reaction upon contact with water. Though Ludwig does not teach explicitly delayed setting, the coated particle is the same as that claimed by

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applicants for their own invention and would have been expected to have the same properties.

The applicants argue that Schutt and Standke teach silane coatings over already existing cement/concrete. In rebuttal, where is the limitation in claim 1 that the reactive support material cannot be already existing Portland cement which is the major component of concrete? Applicants claims contain no limitation that already existing concrete cannot be used nor do they state that their reactive support material must already be in powder form in claim 1. Applicants cannot read limitations they wish to be present into the claims when they are not there.

The applicants next argue that Schutt and Standke are not particulate and pulverent compositions. In rebuttal, again applicants argue a limitation that is not present in their own claims such as independent claim 1. Where is the limitation that the reactive support material is a particulate material or a powder which is what they appear to mean? Note that a concrete/cement surface is comprised of particulates but it would be difficult to call the already existing concrete surface a *powder* (which appears to be what applicants mean for their reactive support material) because it is not. Nevertheless, the examiner is not suggesting anything but only pointing out what is being claimed versus what is being actually argued and the arguments are not commensurate in scope with what applicants are presently claiming. Finally, an existing cement is still capable of being pulverent. If one took a sledgehammer and hit down on the cement/concrete hard the

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already existing cement would most certainly become powderlike and pulverent (pulverized) material.

Mosquet is similar to other references used by examiner in that it includes both a liquid polymer (in this case paraffin wax) and water which would coat the reactive support material (concrete/cement mix). While water is present, applicants argue features not in their own claims. Applicants cannot exclude water since there is no limitation in claim 1, for example, that the reactive support material (e.g. Portland cement) must be dry and then mixed with a liquid polymer such as PVA before it is mixed with water. The examiner still holds the position that while hydration and hydraulic reaction may start due to presence of water, the mere fact that some of the Portland cement particles are coated with PVA when mixing together (including water) could prevent hydration and hydraulic reaction creating a delayed cure for the surface of the cement particles coated with PVA so it would still cause delayed reaction though not as great as the condition of a dry Portland cement (or other reactive support powder). Had applicants claimed mixing dry cement powder (reactive support material) and liquid polymer prior to adding to aqueous slurry or water, then Mosquet and all other references would no longer be applicable in the rejection. However, the examiner is not suggesting at this time since the application is being made final but only pointing out why the prior art still holds over applicants' claims even if it contains water which apparently applicants do not want when liquid polymer is mixed with reactive support material.

The applicants argue Shoshany '623 teach adding wax to concrete mixes to control and reduce efflorescence. The applicants again seem to imply that because Shoshany does not solve their intended use or problem of delayed setting by coating a particle such as a cement particle that it does not read upon their instant invention. They are wrong. Shoshany teaches a wax coated (liquid polymer) over cement particles/powder (reactive support material) and meets applicants' claim limitation (See claim 1). While applicants elected PVA, they did not amend their own claim 1 to only PVA so molten wax can certainly meet the limitation of a liquid polymer and is even applicants last species for liquid polymer in their own claim 5. The fact that Shoshany teaches the same coated particle (cement coated with wax) as that claimed and envisioned by applicants' instant invention means it will also have the same properties including delayed curing action. More so, Shoshany, like applicants teach a concrete/cement mixture which is Portland cement like applicants and most certainly also pulverent or capable of being pulverized.

The examiner disagrees with applicants final synopsis as well. Every reference cited teaches using the same components as applicants to create a coated Portland cement particle/powder/material. The applicants argue limitations not in their own claims (dry reactive support material) which is improper and use comprising claim language which can still include water in their own claimed invention. Further, even if water is in several of the prior art mixtures which also contain either PVA, wax, or some other liquid polymer, there is no reason to expect that this liquid polymer could still coat the surface of the reactive

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support material (Portland cement) and still prevent some delayed curing reaction as a result. While not as effective as mixing "dry" Portland cement powder with PVA or some other liquid polymer, it is still possible to delay curing action even with the presence of water. Again, had applicants claimed a dry reactive support material (such as dry Portland cement powder), then all references with water added simultaneously with PVA or wax would not apply; But, applicants did not claim their invention that way nor is examiner telling or suggesting how to make future amendments.

The applicants argue that the prior art does not teach the intended use (delayed curing reaction) or motivation to solve their problem. In rebuttal, the case law makes it clear the prior art does not have to do that. The new use of a known composition (in this case a Portland cement coated with a liquid polymer such as PVA or wax) is not a patentable distinction.

In conclusion, the new limitation to claim 1 that the polymer compound is detached from the support material by means of mechanical action or solvent (e.g. water) during delayed curing does not overcome the prior art. The prior art teaches the same coated particle as claimed by applicants and it is understood it will behave the same with respect to external treatments such as those that involve mixing which is mechanical shearing to penetrate the protective coating around the reactive support material (cement powder) and solvent that can also dissolve away the protecting polymer coating.

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Marcantoni whose telephone number is 571-272-1373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Paul Marcantoni/
Primary Examiner, Art Unit 1793